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#### 1. Identification

#### Product identifier used on the label

## **VARISTO**

#### Recommended use of the chemical and restriction on use

Recommended use\*: crop protection product, herbicide

## Details of the supplier of the safety data sheet

Company:

BASF CORPORATION 100 Park Avenue Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

## **Emergency telephone number**

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

#### Other means of identification

Substance number: 642608

Synonyms: Imazamox + bentazone sodium tech.

## 2. Hazards Identification

## According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

## Classification of the product

Acute Tox. 4 (oral) Acute toxicity

Repr. 2 (unborn child) Reproductive toxicity

Aquatic Acute 1 Hazardous to the aquatic environment - acute Aquatic Chronic 2 Hazardous to the aquatic environment - chronic

<sup>\*</sup> The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

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#### Label elements

Pictogram:





## Signal Word: Warning

Hazard Statement:

H302 Harmful if swallowed.

H361 Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.

H400 Very toxic to aquatic life.

Precautionary Statements (Prevention):

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing and eye protection or face

protection.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and

understood.

P270 Do not eat, drink or smoke when using this product.
P264 Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you

feel unwell.

P330 Rinse mouth

P308 + P313 IF exposed or concerned: Get medical attention.

P391 Collect spillage.

Precautionary Statements (Storage): P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents/container in accordance with local regulations.

## Hazards not otherwise classified

Labeling of special preparations (GHS):

May produce an allergic reaction. Contains: bentazon

## 3. Composition / Information on Ingredients

## According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

bentazon sodium

CAS Number: 50723-80-3 Content (W/W): 43.66 % Synonym: Bentazon sodium

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**Imazamox** 

CAS Number: 114311-32-9 Content (W/W): 2.0 % Synonym: No data available.

Sodium Hydroxide

CAS Number: 1310-73-2 Content (W/W): >= 0.2 - < 1.0%

Synonym: Sodium hydroxide; Caustic soda

Acetic acid

CAS Number: 64-19-7

Content (W/W): >= 0.1 - < 0.2%

Synonym: Acetic acid; Glacial acetic acid

## 4. First-Aid Measures

## **Description of first aid measures**

#### General advice:

Remove contaminated clothing.

#### If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

#### If on skin:

Wash thoroughly with soap and water

#### If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

#### If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

## Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

## Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no

known specific antidote.

## 5. Fire-Fighting Measures

## **Extinguishing media**

Suitable extinguishing media: water spray, foam, dry powder, carbon dioxide

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## Special hazards arising from the substance or mixture

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, Hydrogen chloride, nitrogen oxides, sulfur oxides, silica compounds, halogenated compounds, metal compounds

The substances/groups of substances mentioned can be released in case of fire.

## Advice for fire-fighters

Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

#### Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire.

#### 6. Accidental release measures

## Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

## **Environmental precautions**

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

#### Methods and material for containment and cleaning up

For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

For large amounts: Dike spillage. Pump off product.

Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

## 7. Handling and Storage

## Precautions for safe handling

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect against heat. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

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No special precautions necessary. The substance/product is non-combustible. Product is not explosive.

## Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect from direct sunlight. Protect from temperatures below: -5 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

## 8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

No occupational exposure limits known.

#### Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

#### Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

## Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

#### Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

#### **Eye protection:**

Safety glasses with side-shields. Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

#### **Body protection:**

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

#### General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be

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decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

## 9. Physical and Chemical Properties

Form: liauid Odour: odourless

Odour threshold: not applicable, odour not perceivable

red-brown Colour: pH value: approx. 5 - 7

(1 %(m), 21 °C)

Melting temperature: The product has not been tested.

Boiling point: approx. 100 °C (1,013 hPa)

Information applies to the solvent.

Flash point: No flash point - Measurement made

up to the boiling point.

Flammability: not applicable

Lower explosion limit: As a result of our experience with this

> product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with

the intended use.

Upper explosion limit: As a result of our experience with this

product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with

the intended use.

Autoignition: approx. 546 °C (Directive

92/69/EEC, A.15)

approx. 23.4 hPa Vapour pressure:

(20°C)

Information applies to the solvent.

Density: approx. 1.19 g/cm3 (OECD Guideline

> (20 °C, 1,013 hPa) 109)

Vapour density:

not applicable Partitioning coefficient nnot applicable

octanol/water (log Pow):

The statements are based on the

properties of the individual

components.

No decomposition if stored and handled as Thermal decomposition:

prescribed/indicated.

Viscosity, dynamic: 9.377 mPa.s (OECD 114)

(20°C)

soluble Solubility in water: Evaporation rate: not applicable

Other Information: If necessary, information on other physical and chemical

parameters is indicated in this section.

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## 10. Stability and Reactivity

## Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

#### Oxidizing properties:

not fire-propagating (Directive 2004/73/EC, A.21)

## **Chemical stability**

The product is stable if stored and handled as prescribed/indicated.

## Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

#### Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme temperatures. Avoid prolonged exposure to extreme heat. Avoid contamination. Avoid electro-static discharge. Avoid prolonged storage.

## Incompatible materials

strong acids, strong bases, strong oxidizing agents

## Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

## 11. Toxicological information

## Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

## **Acute Toxicity/Effects**

#### Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

## Oral

Type of value: LD50 Species: rat (female)

Value: > 300 - < 2,000 mg/kg (OECD Guideline 423) Data refer to a diluted aqueous solution of the substance.

## Inhalation

Type of value: LC50 Species: rat (male/female)

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Value: > 5 mg/l (OECD Guideline 403)

Exposure time: 4 h An aerosol was tested. No mortality was observed.

## Dermal

Type of value: LD50 Species: rat (male/female)

Value: > 2,000 mg/kg (OECD Guideline 402)

Data refer to a diluted aqueous solution of the substance.

No mortality was observed.

#### Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

The product has not been tested. The statement has been derived from the properties of the individual components.

## Irritation / corrosion

Assessment of irritating effects: Not irritating to the skin. Not irritating to the eyes. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Skin

Species: rabbit Result: non-irritant

Method: OECD Guideline 404

## <u>Eye</u>

Species: rabbit Result: non-irritant

Method: OECD Guideline 405

#### **Sensitization**

Assessment of sensitization: There is no evidence of a skin-sensitizing potential. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Mouse Local Lymph Node Assay (LLNA)

Species: mouse Result: Non-sensitizing. Method: OECD Guideline 429

## **Chronic Toxicity/Effects**

#### Repeated dose toxicity

Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. No substance-specific organioxicity was observed after repeated administration to animals.

## **Genetic toxicity**

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

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#### Carcinogenicity

Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

#### Reproductive toxicity

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

#### **Teratogenicity**

Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Imazamox

Assessment of teratogenicity: Indications of possible developmental toxicity/teratogenicity were seen

in animal studies.

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#### Other Information

Misuse can be harmful to health.

## 12. Ecological Information

## **Toxicity**

#### Aquatic toxicity

Assessment of aquatic toxicity:

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

## Toxicity to fish

LC50 (96 h) > 100 mg/l, Oncorhynchus mykiss (OECD 203; ISO 7346; 92/69/EEC, C.1, static) Nominal concentration.

#### Aquatic invertebrates

LC50 (48 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1) Nominal concentration.

#### Aquatic plants

EC50 (7 d) 0.79 mg/l (growth rate), Lemna gibba (OECD guideline 221)

EC10 (7 d) 0.15 mg/l (growth rate), Lemna gibba (OECD guideline 221)

#### Chronic toxicity to fish

Information on: bentazon

No observed effect concentration (35 d) > 9.16 mg/l, Pimephales promelas

Information on: imazamox

No observed effect concentration (28 d) 1.22 mg/l, Cyprinodon variegatus

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#### Chronic toxicity to aquatic invertebrates

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Information on: bentazon

No observed effect concentration (21 d) > 91.6 mg/l, Daphnia magna

Information on: imazamox

No observed effect concentration (21 d) > 10 mg/l, Daphnia magna (semistatic)

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## Persistence and degradability

#### Assessment biodegradation and elimination (H2O)

The product has not been tested. The statement has been derived from the properties of the individual components.

#### Assessment biodegradation and elimination (H2O)

Information on: bentazon

Not readily biodegradable (by OECD criteria).

Information on: imazamox

## **Bioaccumulative potential**

## Assessment bioaccumulation potential

The product has not been tested. The statement has been derived from the properties of the individual components.

#### Bioaccumulation potential

Information on: bentazon

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Information on: imazamox

Bioconcentration factor: < 1, Lepomis macrochirus (OECD-Guideline 305) Does not accumulate in organisms.

#### Mobility in soil

## Assessment transport between environmental compartments

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: bentazon

Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Information on: imazamox

The substance will not evaporate into the atmosphere from the water surface.

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Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

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#### Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control.

## 13. Disposal considerations

#### Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

#### Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

## 14. Transport Information

#### Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

**IMDG** 

Hazard class: 9
Packing group: III

ID number: UN 3082 Hazard label: 9, EHSM Marine pollutant: YES

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (contains 3-ISOPROPYL-1H-2,1,3-BENZOTHIADIAZIN-

4(3H)-ONE 2,2-DIOXIDE, SODIUM SALT, IMAZAMOX)

Air transport

IATA/ICAO

Hazard class: 9
Packing group: III

ID number: UN 3082 Hazard label: 9, EHSM

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID.

N.O.S. (contains 3-ISOPROPYL-1H-2,1,3-BENZOTHIADIAZIN-

4(3H)-ONE 2,2-DIOXIDE, SODIUM SALT, IMAZAMOX)

### **Further information**

Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 L or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2.10.2.7; IATA: A197; TDG: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road"

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Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

## 15. Regulatory Information

## **Federal Regulations**

#### Registration status:

Crop Protection TSCA, US released / exempt

**EPCRA 311/312 (Hazard categories):** Refer to SDS section 2 for GHS hazard classes applicable for this product.

#### Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

**WARNING:** This product can expose you to chemicals including NICKEL (METALLIC), which is known to the State of California to cause cancer, and TOLUENE, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

#### **NFPA Hazard codes:**

Health: 1 Fire: 1 Reactivity: 0 Special:

## Labeling requirements under FIFRA

This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION:

KEEP OUT OF REACH OF CHILDREN.

KEEP OUT OF REACH OF DOMESTIC ANIMALS.

HARMFUL IF ABSORBED THROUGH SKIN.

Avoid contact with the skin, eyes and clothing.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove contaminated clothing and wash before reuse.

## 16. Other Information

## SDS Prepared by:

BASF NA Product Regulations SDS Prepared on: 2023/03/13

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring

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the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK. **END OF DATA SHEET**